

Application No. 09/774,284
Amendment Dated 08/09/2004
Reply to Office Action of 03/09/2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1 – 103 (cancelled)

Claim 104 (currently amended): A method of purifying gram quantities of plasmid DNA from a cell, the method comprising the steps of:

lysing ~~the cell~~ bacterial cells containing plasmid DNA with a lysis solution to form a lysate solution;

removing contaminants from the lysate solution by precipitating the contaminants from a supernatant of the lysate solution;

recovering plasmid DNA from the supernatant using a column chromatography over a tentacle anion exchange resin.

Claim 105 - 108 (cancelled)

Claim 109 (currently amended): The method in claim 104 wherein the ~~step of recovering plasmid DNA from the supernatant further involves the use of an anionic exchange column~~ tentacle anion exchange resin is a TMAE tentacle resin.

Claim 110 (currently amended): The method in claim 109 wherein the use of ~~an anionic exchange column~~ the TMAE tentacle anion exchange resin comprises the step of eluting the plasmid DNA via a step gradient.

Claim 111 (currently amended): The method in claim ~~109-104~~ wherein the ~~anionic-tentacle anion exchange column~~ comprises a resin having has a particle size of 20-40 microns.

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Claim 112 (currently amended): The method in claim 109 wherein the ~~anionic~~ TMAE tentacle anion exchange column comprises a resin selected from a group consisting of: Fractogel EMD TMAE (650-S), and Fractogel (R) EMD TMAE HiCap, Q Sepharose 4 Fast Flow, DEAE 650-S comprises a methacrylate based copolymer having a tentacle linked TMAE functional group.

Claim 113 (currently amended): The method in claim 109 wherein the plasmid DNA is eluted from the ~~anionic~~ TMAE tentacle anion exchange column resin with a salt solution selected from a group consisting of: comprising about 1.9 M ammonium sulfate and at least 0.7M NaCl.

Claim 114 (currently amended): The method in claim ~~109~~ 104 wherein the step of recovering plasmid DNA from the supernatant comprises the steps of:

passing the supernatant through an ~~anionic~~ a tentacle anion exchange column resin ;
wherein the plasmid DNA binds to the ~~anionic-exchange-column resin~~;

eluting the plasmid DNA in a first eluate from the ~~anionic-exchange-column resin~~;

adjusting a salt concentration of the first eluate to contain at least 2M ammonium sulfate;

passing the first eluate through the ~~a~~ a hydrophobic interaction column resin; wherein supercoiled plasmid DNA binds to the hydrophobic interaction ~~column resin~~; and eluting the supercoiled plasmid in a second eluate from the hydrophobic interaction ~~column resin~~ via an eluent having less than 2M ammonium sulfate.

Claim 115 (New): A method for removing contaminants from a plasmid DNA solution comprising:

a) contacting a solution comprising plasmid DNA with a tentacle anion exchange resin, the solution having a conductivity at which the plasmid DNA is bound to the resin;

b) washing the resin to elute the contaminants; and

c) eluting the plasmid DNA with a step or continuous gradient of increasing conductivity.

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Claim 116 (New): The method of claim 115, wherein the tentacle anion exchange chromatography resin comprises tentacles having about 15 to about 50 units in length.

Claim 117 (New): The method of claim 115, wherein the tentacle anion exchange chromatography resin comprises tentacles having an average of about 18 charged groups covalently bound to each tentacle.

Claim 118 (New): The method of claim 115, wherein the tentacle anion exchange resin is a strong anionic changer resin.

Claim 119 (New): The method of claim 115, wherein the tentacle anion exchange resin has TMAE functional groups.

Claim 120 (New): The method of claim 115, wherein the plasmid DNA solution is a clarified lysate obtained after alkaline lysis of bacterial cells comprising the plasmid DNA and removal of precipitated proteins, chromosomal DNA and cell debris.

Claim 121 (New): The method of claim 115, further comprising a step of hydrophobic Interaction Chromatography (HIC).